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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,825	10/20/2003	Robert E. Seymour	TI-35905	6226
23494	7590	09/21/2004	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			LAUTURE, JOSEPH J	
			ART UNIT	PAPER NUMBER
			2819	

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/689,825

Applicant(s)

SEYMOUR, ROBERT E.

Examiner

Joseph Lauture

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION*Specification*

The application has not been checked to the extent necessary to determine the presence of all possible typographical and grammatical errors. Applicant's cooperation is requested in correcting any errors of which he/she may become aware in the application.

Drawing Objections

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "804", "812" and "800" have all been used to designate NDAC (See figure 8b). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 and 19-25 are rejected under 35 U.S.C 102 (b) as being anticipated by Choi et al (US 6,259,392).

Choi et al teach in figure (7) a digital-to-analog converter apparatus and method, the apparatus comprising: a positive capacitor array comprising N capacitors, said N capacitors having a common side configured for coupling to a pedestal (reference) voltage (V_{ref}), and another side configured for coupling into an input signal (A_{I1}) and the reference signal through control of N switches (S_{20} thru S_{38}), wherein each switch couples to a capacitor upon receipt of a control signal from a switch control circuit (210) to provide incremental gain levels; an additional capacitor (C_0) having one side configured for coupling to the pedestal voltage, and another side configured for coupling to the input signal during sampling to provide a course adjustment and a fine adjustment and facilitate reduction of positive full-scale voltage and thus reduce an operating range of the digital-to-analog converter to control gain, wherein the additional capacitor can be switched between the input signal (A_{I1}) and ground and the reference signal (V_{ref}) to increase an amount of charge sampled to decrease a level of the input signal necessary to achieve full charge levels and thereby reduce the range to less than the reference voltage, and to provide additional charge back to the converter and adjust a low-end of the range.

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi et al (US 6,259,392) in view of Confalonieri et al (US 6,600,437).

Regarding those claims, Choi et al teach the essential features of the claimed invention as set forth above except for a) a negative capacitor array wherein each capacitor selectively couples to an input signal, ground and an input signal to achieve a desired offset voltage, b) a comparator having its output coupled to a successive approximation register. However, Confalonieri et al teach in figure (6) a capacitor digital-to-analog converter having a positive capacitor array (P) and a negative capacitor array (M), wherein each capacitor is sequentially coupled to an input signal, a reference signal and a ground terminal, and wherein (See figure 7) a successive approximation register (25) is coupled to the output of a comparator (20) to facilitate correction of gain errors. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Choi et al and Confalonieri et al to achieve a superior converter with improved system performance and reliability because this would reduce power consumption in the system (See Column 2, lines 62-64). It would have been further obvious to make use of capacitors having appropriate capacitance values in the converter.

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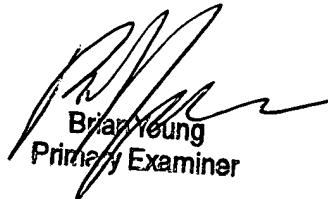
CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Lauture, whose telephone number is (571) 272-1805. The examiner can normally be reached Monday thru Friday between 9:30 am and 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Tokar can be reached at (571) 272-1812. The fax number for the organization to which this application is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (571) 272-1562.

Joseph Lauture
Group: 2819
Date: 09/17/2004



Brian Yeung
Primary Examiner